***Roland vanOostveen (Canada)***
Associate Professor, Faculty of Education University of Ontario Institute of Technology
roland.vanoostveen@uoit.ca

# AN INTRODUCTION TO PROBLEM-BASED LEARNING ONLINE IN UOIT'S BA IN ADULT EDUCATION AND DIGITAL TECHNOLOGY

***Роланд ванУствін (Канада)***



## ОНТАРІО-ІНСТИТУТІ ТЕХНОЛОГІЙ

Traditionally HE learning is defined by a 'content learning' orientation. This means that the focus is on the delivery (by the professor) of information, concepts and the like to the students. Students are expected to 'learn' the concepts. Learning is usually interpreted in terms of memorization and comprehension of the concepts, and at times, as application of the concepts to questions or problems that are posed as part of tasks, assignments, quizzes, tests and examinations. Course standing is usually determined by how well students perform on a mix of these summative assessments. To a large extent, control of the curriculum in terms of what the students will 'learn' and how it will be 'learned' is in the hands of the professor (Goodson, 2005; Oliver & Omari, 1999).

When courses are offered online, traditional course delivery, as described above, tends to devolve to a lonely experience with learners interacting with the course content and having few opportunities to query the professor, other students or anyone else. This is precisely the situation that is found in many MOOCs, resulting in very high drop out rates, among many other detrimental effects (Means, Bakia & Murphy, 2014). In order to provide a profoundly different type of experience a paradigm shift with respect to how curriculum is viewed and experienced by students, teaching assistants (TAs) and professors is required. Problem based learning (PBL) was adopted in the University of Ontario Institute of Technology's (UOIT) Bachelor of Arts in Adult Education and Digital Technology (AEDT) program as an attempt to instigate this type of shift. The AEDT program is fully online, using a wide variety of synchronous and asynchronous tools.

The origins of PBL lie in the medical school at McMaster University (Hamilton, Canada) in the 1970's, where the arguments for it's adoption were rooted in the early introduction of students to case based studies in clinical settings, allowing for student self-enacted motivation and the student's ability to see the relationships between theory and practice (Barrows & Tamblyn, 1980; Lee & Kwan, 1997). The early versions of PBL procedures centred on small groups of learners focusing on the provided problems, attempting to clarify the problems by creating questions about concepts that were not well understood and then responding to the created questions by integrating new knowledge uncovered by each group member from their individual research work (Boud & Feletti, 1998).

All AEDT courses are articulated as a series of 12 modules, each including: 1. Video-based case studies that are made publically available on YouTube.

Learners are required to interact with the video clips prior to moving to the synchronous virtual conferencing 'tutorial' sessions. The case studies present a situation or context to which learners are invited to identify or rather to create a problem that they will explore or research as they move towards a solution. The YouTube video clips are structured in the form of modified Problem Based Learning Objects (PBLOs) (vanOostveen, Desjardins & Bullock, 2010).

PBLOs are small reusable digital multimedia capsules that: present a video- based case study as a context or situation in which an ill-defined problem can be identified or created, poses questions that will foster the analysis of the situation, provides an theoretical lens that challenges learner's pre-conceived notions that are elicited by the video-based case study, and finally, poses questions that initiate action toward problem clarification/comprehension and solution creation. Problems, themselves, are defined as a differential between the currently perceived situation and the desired or resolved situation. The differential identified above can be modified through the application of knowledge and resources. It is the responsibility of learners to determine what knowledge and resources are possessed by the team and that, which must be discovered and constructed.

Hour long video conferencing 'tutorial' sessions, held in Adobe Connect (a browser-based audio/video virtual conferencing tool), are scheduled at various times of the day. Learners are required to attend one of the sessions. During the 'tutorial' sessions, the learners discuss their perceptions of the video clips and begin to formulate plans to create solutions. Instructors facilitate the discussion by listening and responding to the learners with support or challenge as required. Savin-Baden (2007)

suggests that facilitators should «recognize that being a facilitator means also being a learner», «guide but not interrupt», «represent etiquette» and «acknowledge and use prior experience» (p.53).

Solutions are fashioned by small teams of learners who work collaboratively using a variety of digital technologies. Information and resources are accumulated from Internet sources and used to actively construct knowledge by the learners as they research and learn about the problem and the situation illustrated in the video case study (vanOostveen, 2014). The locations in which this knowledge is built is shared through the affordances that are integral to the tools used. The solutions are shared with class colleagues during regularly scheduled presentations held within the tutorial sessions.

The PBL orientation used in the AEDT program require the setting of a context within which individual problems or an over-arching problem or multiple problems can be identified for the learners to investigate. The assignments in the course then becomes the setting for the creation of solutions to the problem(s). Assessment tasks are focused on process, rather than content, with a gravitation to performance-based and other authentic assessment methods. In other words learners need to be able to gather information about the learning process that is being experienced, so that judgments about the value of the work can be made by all. The PBL work processes are primarily collaborative, as there is much to

be gained from knowledge created by individuals joined in a community of learners. Accordingly, a wide variety of tools, applications, and environments, particularly tools which support collaboration, are available for the learners to work on and in. Prime examples of these types of applications are wikis, blogs and Google Docs. Learners are free to choose their own tools as long as they share the tools with others in the course.

Learners are also specifically provided with spaces and tasks that require metacognitive reflection in order for them to concentrate on 'thinking about their thinking' and to begin to recognize the changes that the PBL exercises must be made to their thinking about the scenarios, contexts, concepts and theories within the course. These changes in thinking provide evidence for learning that occurred. An example of a metacognitive activity that has been used in the PBL course in the AEDT program required the learners to begin and end the course with the production of a concept map focusing on the concept of 'learning'. As a final formal assessment task, learners were asked to self-evaluate and provide rationales for the similarities and differences between the two concept maps.

Anecdotally, learners have responded to the online PBL programming in a variety of ways:

Many learners, particularly those who are coming to the program with extensive non-academic interests and experiences, were energized, fully engaged and motivated by the PBL environment and the interactions which occur within it.

Some learners actively resisted the 'learner centred' focus of the courses. Typically learners who fit in this group have difficulties in making the shift away from the traditional orientation of having ceded control of their learning to the professor.

Initial periods of frustration on the parts of most learners turn into 'a-ha' moments when learners begin to trust the process and rely on the conversations with their colleagues to provide insights into the processes in which they are involved.

Several studies that are designed to provide specific evidence in support of the use of PBL in online courses are underway and these will be reported on in the near future.

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